

moment. I was reading a paper to our Royal Society about Auvergne, and particularly upon elevation craters, which was quite in point. I am writing a paper just now which I intend for the R. S., London, on the Pyrenean springs, their temperature, geological relations, etc.; and on the former point, temp., I am vain enough to hope that it may prove a sort of model to future observers: at least no one has hitherto so observed, I believe. . . . But these are only secondary occupations, which, with my lecturing labours, only revolve round my primary, the polarized heat. I have managed to magnify the effects so as to be, I hope, beyond cavil. . . . I think that experiment is a quietus for Biot”.

## Societies and Academies

### PARIS

Academy of Sciences, December 2 (*C.R.*, 201, 1073-1156). HENRI DOUVILLÉ: Notice on the work of the late H. F. Osborn, *Correspondant* of the Academy. ALEXANDRE GUILLIERMOND, MAURICE FONTAINE and Mlle. ANNE RAFFY: The existence in *Eremothecium Ashbyi* of a yellow pigment belonging to the flavin group. The pigment from the *Eremothecium* has been directly compared with Karrer's lactoflavin and shown to possess similar properties. It is suggested that the pigment may play an important part in the metabolism of these fungi. JULIEN COSTANTIN: The *enroulement* of the *Belle de Juillet* variety of the potato. Remarks on the favourable effects of high altitudes on this disease. CHARLES PÉREZ was elected a member of the Section of Anatomy and Zoology in succession to the late Louis Joubin. KAROL BORSUK: Contribution to the theory of dimensions. P. RACHEVSKY: A dual bimetric system. SERGE FINIKOFF: Stratifiable couples attached to surfaces the asymptotics of which belong to linear complexes. SZOLEM MANDELBROJT: The  $\bar{J}$  right lines and singular points of functions represented by Dirichlet's series. R. O. KUZMIN: The method of Tschebicheff for the approximate evaluation of integrals. JEAN LAGRULA: The intensity of gravity in Algeria, in the Midi of France and in the island of Majorca. Tables of results obtained during 1935 with the Holweck-Lejay pendulum. SANTIAGO ANTUNEZ DE MAYOLO: The interpretation of the  $\alpha$  coefficient of fine structure. JACQUES YVON: The fluctuations of the density at the critical point. Discussion of a theorem of Smoluchowski from the point of view of the effect of gravity. PIERRE VERNOTTE: Concerning a problem of convection: insufficiency of the equation of heat. JEAN MERCIER: The determination of the region of synchronisation of two oscillators. JEAN BERNAMONT: The fluctuations of potential at the boundaries of a metallic conductor of small volume traversed by a current. MARCEL LAPORTE: The duration of the very short flashes of light obtained by discharging a condenser through a gas tube. Study of the discharge through a tube containing argon and mercury vapour. The duration of the very intense part of the flash was of the order of  $10^{-8}$  second. JACQUES SOLOMON: The absorption in matter of particles of great energy. JEAN BECQUEREL: The determination of the paramagnetic susceptibilities of crystals of the rare earths, by the measurement of the paramagnetic rotatory powers. RAYMOND RICARD and ANTOINE SAUNIER: The spark spectra of

cadmium. Results of a study of the Cd III and Cd IV spectra. PIERRE AUGER and ALBERT ROSENBERG: The analysis of the cosmic corpuscular radiation under a screen of 28 metres of soil. The results differ considerably from those obtained above the soil at various altitudes. The soft group, if it exists at this depth, cannot be more than 3 per cent, while at 3,500 metres it amounts to 40 per cent. GEORGES CHAMPETIER: The hydration of chromic chloride in heavy water (deuterohydrogen oxide). The hydration of chromium chloride in ordinary and heavy water has been followed by measurements of the electrical conductivity. The reaction proceeds more slowly in the heavy water, the ratio of the velocities being approximately one to three. Mlle. M. T. SALAZAR: The constitution of the capillary layer in solutions of malachite green. RENÉ DALMON: The nitration of cellulose by the vapour of nitrogen pentoxide. The yield of trinitrocellulose in this reaction was found to be 99.3 per cent. MARCEL BALLAY: The constitution and properties of some alloys of iron, carbon and beryllium. Study of seven alloys containing amounts of beryllium increasing up to 3.88 per cent. PIERRE VAN RYSELBERGHE: Thermodynamic potentials and affinity. PAUL RENAUD and ERNEST BAUMGARDT: The law of displacement of equilibrium. ANDRÉ CHRÉTIEN and OSCAR HOFFER: The existence of two hydrates of potassium thiocyanate. HENRI GUÉRIN: The action of heat on calcium and strontium ortho-, pyro- and metarsenates. The orthoarsenates can be heated to 1,200° C. in a vacuum without change: pyroarsenates and metarsenates by prolonged heating at temperatures above 800° C. are slowly converted into orthoarsenates. XAVIER THIESSE: The action of oxidising agents on sodium hypoferrite. A description of various products obtained by treating alkaline solutions of sodium hypoferrite with chlorine and bromine; the concentration of the sodium hydroxide is the determining factor. JEAN BARLOT: The hydrogenation of bituminous schists at the ordinary pressure. Results of the distillation of four schists of different types in hydrogen at the ordinary pressure. The yields of oil were increased, the tar and sulphur percentages reduced. Mlle. RENÉE LE BLANC: Some *Chaetoceros* of the Etang de Thau. ANTONIN TRONCHET: Observation *in vivo* of the tactile dots of the tendrils of *Bryonia dioica*. A. QUINTANILHA: The cytology of the copulations *illégitimes* in *Coprinus fimetarius*. ANTOINE MAGNAN and HENRY GIRERD: Study of the pressures about a pigeon beating its wings. BORIS EPHRUSSI and GEORGE W. BEADLE: The conditions of autodifferentiation of Mendelian characters. JEAN LAVOLLAY: The fixation and exchange of cations in living beings. The character of generality of the laws of exchange of bases. EMIL CIONGA: An acid ester contained in the root of officinal valerian. RAOUL LECOQ and RENÉ CAREL: Comparison of the acetone-producing action of some food lipids and castor oil.

### AMSTERDAM

Royal Academy (*Proc.*, 38, No. 8, October 1935). J. H. C. LISMAN and W. H. KEESOM: The melting curve of oxygen to 170 kgm./cm.<sup>2</sup>. The melting point of oxygen as a function of the pressure and a calculation of the triple point and density at the latter temperature. W. H. KEESOM and J. HAANTJES. (1) Further results of the separation by rectification of neon into its isotopic components. Densities and mean atomic weights of various

fractions. (2) Vapour pressures of neon of different isotopic compositions. Deduction of the ratio  $p_{201}/p_{22}$  of the two isotopes and comparison with theory. J. DE GIER and P. ZEEEMAN: The isotopes of nickel. Results with the parabola method for the abundance of the isotopes 58, 60, 62 and 64. J. G. VAN DER CORPUT: Distribution functions. T. J. POPPEMA and F. M. JAEGER: The exact measurement of the specific heats of solid substances at higher temperatures. (20) On the molecular heats of the alloys of palladium and antimony in comparison with the sum of the atomic heats of the free elements. (21) On the molecular heat of the compound  $PtSb_2$  in comparison with the sum of the atomic heats of the free component elements. (22) The molecular heats of the supposed binary compounds of copper and palladium. E. COHEN and J. J. A. BLEKKINGH, JR.: The influence of the degree of dispersion on physico-chemical constants (4). The density of potassium chloride is the same whether the particles have a mean diameter of 0.1 mm., 0.5 mm. or 5 mm. E. DUBOIS: The sixth (fifth new) femur of *Pithecanthropus erectus*. A further fragment of a shaft of a femur in the author's collection has been identified as a fossil bone of *Pithecanthropus erectus*. A. J. HAAGEN SMIT and F. W. WENT: A physiological analysis of the growth substance. Tests on a large number of substances to determine the influence of chemical properties on ability to stimulate plant growth. H. P. BERLAGE, jun.: The theorem of minimum loss of energy due to viscosity in steady motion and the origin of the planetary system from a rotating gaseous disc. J. POPKEN and K. MAHLER: A new principle for proof of transcendancy. G. H. R. VON KOENIGSWALD: A fossil mammalian fauna from South China containing simians. ELSA REUHL: Oxygen intake of oily and starchy seeds. The effect of variation of the partial pressure of oxygen on its intake by various germinating seeds. J. DOUTRELIGNE: Note on the structure of the chloroplasts. K. V. THIMANN: An analysis of the activity of two growth-promoting substances on plant tissues. Physiological tests on substances having a chemical structure similar to that proposed for auxin A. B. VAN DER EYKEN: Development of denture and teeth in *Salmo irideus*. (1) Lower jaw. K. H. FINLEY: An anatomical study in familial olivo-ponto-cerebellar hypoplasia in cats. G. BLOMHERT: Contribution to the study of the haptic perception of proportions. Experiments to determine whether it is possible to perceive the proportions of a simple geometrical object (rectangle) by touch alone. P. E. VERKADE, J. VAN DER LEE, A. J. T. VAN ALPHEN and M. ELZAS: Researches on fat metabolism. (7)  $\beta$ -oxidation of normal saturated dicarboxylic acids administered *per os*. Evidence of  $\beta$ -oxidation of dicarboxylic acids by the living organism from experiments with dogs. J. M. WEGENER: Investigation of the two and three dimensional Finsler spaces with the ground form  $L = \sqrt[3]{(a_{ik}x^i x^k x^l)}$ .

#### Cracow

Polish Academy of Science and Letters, November 4. K. DZIEWONSKI and L. GIZLER: The reactions of thio-urea with the arylalkylketones. K. ROUPPERT: *Peridermium truncicola* on the stone pine in the Tatra massif. Z. GRODZINSKI: The development of the veins of the blastoderm of the fowl. W. CISLIK and Z. KAWECKI: The appearance in Poland of *Aphelinus mali*. M. H. LUCZYNSKA: The sense of distinction of form and visual memory in lizards.

## Forthcoming Events

[Meetings marked with an asterisk are open to the public.]

### Monday, January 6

SOCIETY OF GLASS TECHNOLOGY (MIDLANDS SECTION), at 7.30.—(at the Talbot Hotel, Stourbridge).—W. H. S. Chance: "The History of Optical Glass".

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—W. B. Kennedy Shaw: "An Expedition in the Southern Libyan Desert".

### Tuesday, January 7

UNIVERSITY OF LEEDS, at 6.—(in the Philosophical Hall, Park Row, Leeds).—Prof. J. H. Priestley: "Wood-alive".

### Wednesday, January 8

SOCIETY OF GLASS TECHNOLOGY (Joint Meeting with the PLASTICS GROUP OF THE SOCIETY OF CHEMICAL INDUSTRY), at 8 (in the rooms of the Chemical Society, Burlington House, Piccadilly, W.1).—Prof. G. T. Morgan, N. J. L. Megson and L. E. Holmes: "Organic Glasses".

J. Wilson: "Plastics for Laminated Safety Glass".

### Friday, January 10

INSTITUTION OF MECHANICAL ENGINEERS, at 6.—J. Johnson: "The Future of Steam Propulsion" (Thomas Lowe Gray Lecture).

PHYSICAL SOCIETY'S EXHIBITION, January 7-9.—Annual Exhibition to be held at the Imperial College of Science and Technology.

January 7, at 7.45: R. A. Bull: "Some Instruments used in recording Sound on Film".

January 8, at 7.45: R. W. Paul: "Electrical Measurements before 1886".

CONFERENCE ON "MECHANIZATION IN MIXED FARMING", January 7-10. To be held at Rhodes House, Oxford.

## Official Publications Received

### Great Britain and Ireland

Agricultural Research Council. Observations by the Tuberculosis Committee on the Experiment with Spahlinger Vaccine in Northern Ireland. Pp. 6. (London: H.M. Stationery Office.) 2d. net. [412]

Department of Scientific and Industrial Research. Index to the Literature of Food Investigation. Vol. 6, No. 2. Compiled by Agnes Elisabeth Glennie, assisted by Gwen Davies. Pp. v+311-621. (London: H.M. Stationery Office.) 5s. net. [912]

### Other Countries

New Zealand: Department of Lands and Survey. Annual Report on Scenery-Preservation for the Year ended 31st March 1935. Pp. 7. (Wellington: Government Printer.) 6d. [1612]

The Institute for Science of Labour, Kurasaki. Annual Report of the Director for 1934. Pp. ii+40. 70 sen. Report No. 31: An Essay on the Basal Metabolism of the Japanese. By Dr. Gito Teroaka. Pp. 34. 70 sen. Report No. 32: On the Measurement of Sitting Height (First Report). By Dr. T. Yagi. Pp. 15. 30 sen. (Kurasaki: Institute for Science of Labour.) [1612]

Journal of the Indian Institute of Science. Vol. 18A, Part 14: Study of the Bismuth Electrode. By D. N. Mehta and S. K. Kulkarni Jatkari. Pp. 100-113. 10 annas. Vol. 18A, Part 15: The Estimation of Acetone in Methyl and Ethyl Alcohol. By S. D. Sunawala and M. C. T. Katti. Pp. 115-122. 12 annas. Vol. 18A, Part 16: The Steric Factor in Organic Chemical Reactions. Part 1: Influence of Esterification on the Mode of Addition of Bromine to  $\beta$ -Phenyl-Propionic Acid. By P. Ramaswami Ayyar. Pp. 123-128. 10 annas. (Bangalore: Indian Institute of Science.) [1612]

Observatoire de Zi-ka-wei. Annales de l'Observatoire astronomique de Zé-sé (Chine). Tome 19: Tables de petites planètes. Fasc. 2: Sept planètes du type flora (1000° < n < 1100°). Par le P. E. de la Villamarqué. Pp. ix+80. (Sung-kiang: Observatoire de Zé-sé.) [1612]

### Catalogues, etc.

Catalogue of the Twenty-sixth Annual Exhibition of Scientific Instruments and Apparatus, held at the Imperial College of Science and Technology, South Kensington, London, S.W.7, January 7th, 8th and 9th, 1936. Pp. 192+lxiv. (London: The Physical Society.)

Diary for 1936. Pp. 64+16+16+Diary. (Bonnybridge: John G. Stein and Co., Ltd.)